

REMARKS

The Office Action of November 17, 2005 has been carefully considered.

Regarding the objection to the drawings under 37 CFR 1.83(a), the downstream interface transceiver in a service card appears as block 70 in Fig. 2, and the upstream interface transceiver as block 20. However, for greater clarity, the "interface transceiver" has been replaced by "service interface" in claim 29. The service interface is shown by reference numeral 84 in Fig. 4 and by reference numeral 116 in Fig. 5. As stated in paragraph [0036] of the published application, "Service interface 84 can be, for example, an optical or electrical transceiver..." Service cards are shown a reference numerals 82 in Fig. 4 and 110 in Fig. 5, as well as in Fig. 2.

Claims 5, 17 and 30 have been amended in accordance with the Examiner's request, to remove the informalities.

Claims 2-3, 10, 15-21, 23-25, 27, 29, 30 and 32 are rejected under 35 USC 112, first paragraph, as being indefinite.

Applicants have amended these claims in accordance with the Examiner's suggestions so that the language used is consistent.

The Office Action alleges that it is unclear why there are two steps of sorting the services data, one in claim 1 and another in claim 30, since the steps are very similar in these two claims. Claim 1 relates to transmission of services data through a metro network between service collection units and aggregator units. The services data is received in one or more aggregators, where the services are sorted for transmission to their final destinations. Claim 30 clarifies that the received services data is sorted according to service

type, and all services of the same type after sorting are aggregated for further transmission together. Claim 30 has now been amended to delete the phrase "from a plurality of packets" which may be confusing.

Regarding claim 32, the Office Action alleges that it is unclear whether "a service collection unit" in line 11 of claim 32 is the same as the "at least one service collection unit" in claim 1. The answer is that the unit belongs to the group defined in Claim 1, but is not necessarily the same unit. In Claim 1, the service collection unit or units serve to collect services data from a plurality of sources for transmission into the metro network. In Claim 32, the service collection unit receives services in packets from the metro network. The receiving unit may be the same as the transmitting unit, or may be a different such unit. In order to clarify this issue, Claim 32 has been amended to indicate that the packets are unloaded in "at least one of said at least one service collection unit."

It is alleged that there is insufficient antecedent basis for the limitation "said aggregated services data" in claim 2, since only sorted services data are aggregated. Claim 30 depends from claim 1 which claims collecting and segmenting services data to form packets which are sent to an aggregator for sorting. Claim 30 adds the limitation of aggregating again the sorted services data, this time according to type of service. Claim 2 adds further method steps describing in greater detail the process in the aggregator. Therefore, claim 2 has been amended to depend from claim 1 instead of claim 30, thereby providing proper antecedent basis for this term. Similarly, claim 32 should more appropriately depend from claim 1, and has been amended accordingly.

Regarding the term "each service" in claim 21, the claim has been amended to recite "each services data," for which there is antecedent basis in claim 1.

Withdrawal of this rejection is requested.

Claim 1 has been rejected under 35 USC 103(a) over Mo et al.

The present relates to a method for data transmission and data receipt over an optical network. The method includes a number of novel steps, including collecting, in at least one service collection unit, services data in their original protocols from a plurality of different types of services to be transmitted, processing the services data in their original protocols into packets, converting the packets into optical signals on an optical fiber for transmission into a metro network, and sorting the services data from a plurality of converted packets in at least one aggregator module. Each of the service collection units and each of the aggregator modules has an optical transceiver, coupled for optical communication between them.

The Office Action states that Mo et al discloses collecting services data in their original protocols from a plurality of different types of services, citing col. 8, lines 12-24.

It is submitted that the term "segmenting" as in the present application means *cutting*, where the bit streams of data services are cut into segments of different sizes and packetized in novel packets which are routed through a network. In the Mo et al patent, "segmenting" means *sorting*, as can be understood more particularly from col. 8, lines 11-17. The traffic, i.e., ready made data packets, is segregated and processed based on a two level, high/low priority scheme. The traffic flows may be segmented (i.e., sorted) into any

number of suitable traffic types, based on selected traffic type identifiers.

The Mo et al reference discloses a device and method for separating data of a single service into different traffic types, namely, high priority or low priority. There is no teaching or suggestion or possibility of using different services, but only a single service, IP (Ethernet) packets. Mo et al uses the terminology "segmenting," but as noted above, it designates an entirely different function. As stated in the Abstract of Mo et al, the "method and system for transporting traffic in a packet-switched network segments high priority pass-through traffic from low priority pass-through traffic" (emphasis added). In col. 2, lines 55-61, Mo et al describes another technical advantage of the invention, namely providing class of service support for Internet protocol (IP) traffic. Traffic is distinguished and routed based on its class of service parameters, which allows high-priority traffic to be processed with minimal delay, and low-priority traffic to be delayed or dropped. Again, in the Detailed Description in col. 3, lines 54-61, Mo et al states, "the transport network 10 is an Internet protocol (IP) network for transporting IP and Multiple Protocol Label Switch (MPLS) packets," or "any other packet-switched network operable to route...data packets based on network protocol addresses."

In fact, the invention uses services to build traffic. The claimed method puts together the services into traffic which can then be routed according to the method of Mo et al. In other words, the invention is a level below or before the level of treatment of Mo et al.

The Office Action further alleges that Mo et al processes the services data in their original protocols into packets, pointing to col. 8, line 32. Mo et al receive ready-made

packets and do not process any services data into packets; they merely route existing packets according to a priority scheme. Col. 8, lines 32-35 describes a transmit buffer which is suitably sized to hold two or more packets, operable to hold direct pass-through packets while the multiplexer processes a current packet, namely multiplexing the packets onto an optical fiber. As stated above, there is no teaching or suggestion or need or possibility in Mo et al for processing services data so as to form packets, as is done according to the claimed invention.

It is also alleged in the Office Action that Mo et al includes an aggregator module (traffic buffer 150, local buffer 152, and multiplexer 124) for sorting the services data from a plurality of converted packets. It is respectfully submitted that the traffic buffer 150, local buffer 152, and multiplexer 124 form a *router or switch*, rather than an aggregator module according to the invention. As explained at col. 4, lines 8-10, col. 6, lines 19-21, and col. 8, lines 18-67, the Mo et al network includes a plurality of Internet protocol transport (IPT) nodes, each IPT node including one or more receiver-transceiver pairs (RTP) and a processing system interconnected by an internal Ethernet connection. The RTP includes a demultiplexer coupled to a receiver, and a multiplexer coupled to a transmitter, with the traffic buffer and local buffer between the demultiplexer and multiplexer. The demultiplexer includes a lookup table 162 for identifying pass-through and local traffic; the pass-through traffic goes via the traffic buffer to the transmitter, while the local traffic receives low-priority and is sent to the transmitter if there is available bandwidth. This system is not constructed, nor does it operate as does the aggregator of the invention, which includes at least one aggregator module for

sorting services data, in original protocols, from a plurality of packets formed in at least one service collection unit by collecting and processing services data from a plurality of different types of **services**, only one of which is IP protocol service.

The Office Action states that Mo et al fails to explicitly show an aggregator optical transceiver, stating that it would be obvious to combine a metro network and an aggregator optical transceiver with Mo et al for the benefit of a bigger transport network.

While optical transceivers, *per se*, were known in the art, Mo et al fails to show "an aggregator optical transceiver" because such an aggregator did not exist before the claimed invention. A device carrying out the functions of the aggregator of the invention was not known to one skilled in the art before the filing date of the present application. There is no device shown in Mo et al or otherwise known to the Applicants which sorts services data from a plurality of converted packets prepared by a service collection unit as described in the invention, and transmits on optical signals to the device over a network. This is precisely the novelty of the present invention which Applicants are claiming.

Withdrawal of this rejection is requested.

Claim 1 has been provisionally rejected on grounds of obviousness-type double patenting over claim 1 of co-pending application serial no. 09/753,513. Thus far, neither present claim 1 nor claim 1 in the co-pending application has been found to be allowable over the art. Should claim 1 be found to be allowable in both applications, a terminal disclaimer will be filed to remove this rejection.

The allowability of claims 5-9, 11, 12, 14, 22 and 31 has been noted. Claim 5 has been placed in independent form, with

claims 8-12 and 15-20 depending directly or ultimately from claims 5. Claims 5, 8-12 and 15-20 are deemed to be allowable.

In view of the foregoing amendments and remarks, Applicants submit that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,



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